CLAIMS

1. A full color display and photocell device, comprising:

a liquid crystal display ;

a transparent panel light behind the LCD that can emit a monochromatic light beam having a selected one of three colors; and

a photovoltaic cell behind the transparent panel light that converts light energy emanating from the transparent panel light into electrical energy.

2. The full color display and photocell device according to claim 1, wherein the transparent panel light comprises:

a tri-color light emitter that can emit the monochromatic light beam having a selected one of the three colors; and

a light pipe that guides light from the sequential tri-color light emitter through the LCD array.

3. The full color display and photocell device according to claim 1, wherein the transparent panel light is a tri-color organic light emitting diode panel array that can emit the monochromatic light beam having a selected one of the three colors.

4. The full color display and photocell device according to claim 1, further comprising a controller that synchronizes information coupled to the LCD and controls the transparent panel light to emit a sequence of monochromatic light beams of three colors.

5. The full color display and photocell device according to claim 1, wherein the LCD is one of a monochromatic twisted nematic LCD, and a monochromatic super twisted nematic LCD, a polymer dispersed liquid crystal display (PDLCD) and a cholesteric LCD.

6. The full color display and photocell device according to claim 1, wherein the light emanating from the transparent panel light comprises at least one of

ambient light passing through the LCD and transparent panel light and light emitted by the transparent panel light.

8. The full color display and photocell device according to claim 1, wherein the photocell has a surface adjacent the transparent panel light that is dark and substantially non-reflective.

9. The full color display and photocell device according to claim 1, wherein the LCD is rated for at least 75 frames per second.

10. An electronic apparatus having a full color display and a photocell, comprising:

a fast response LCD panel;

a transparent panel light behind the fast response LCD panel;

a photocell behind the monochromatic fast response LCD panel; and

a controller that presents color information on the full color display by generating a sequence of monochromatic light beams of three colors emitted by the transparent panel light synchronously with color information coupled to the monochromatic fast response LCD panel at a rate of at least 75 monochrome frames per second, wherein the photocell converts light energy emanating from the transparent panel light into electrical energy.

11. A method for operating a full color display and photocell device, comprising:

controlling a transparent panel light located behind a fast response LCD rated for at least 75 frames per second to emit a repeated sequence of three monochromatic light beams at a rate of at least 75 per second;

synchronizing frames of monochromatic information coupled to the fast response LCD to the sequence of three monochromatic light beams; and

converting light energy emanating from the transparent panel light into electrical energy.